U.S. Coast Guard Research and Development Center

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"MESSAGE RECEIVED"
HOW TO BRIDGE THE COMMUNICATION GAP AND SAVE LIVES

Interim Report
March 2004

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U.S. Department of Homeland Security
United States Coast Guard
Office of Communications Systems (CG-62)
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N O T I C E

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16. Abstract (MAXIMUM 200 WORDS)

Effective command and control, resource allocation and personnel safety during an emergency depend on the ability of first responders to talk via radio, directly, without dispatch and in real time. Many technologies are available to fill this need, but in spite of this fact, the majority of interagency communication efforts have not succeeded because the policies and procedures necessary to support the interoperability initiative long-term were never developed and put in place. This guide addresses that problem by providing public safety agencies with the process needed for developing the policies and procedures to support the implementation and maintenance of the interoperability effort over time. It takes you step-by-step through the sequence of events beginning with the initial formation of a working group, through the administration of the needs assessment, the formation of the essential committees, the conduct of the technical and operational field tests, and finally the implementation of the technology solution and the design of recurring training. This guide comes complete with extensive appendices containing detailed examples of a variety of supporting materials.

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EXECUTIVE SUMMARY

Providing communication interoperability for public safety first responders entails far more than finding and emplacing a technology and training the operators. The key to a successful interoperability project is creating the appropriate policies and procedures to support the effort throughout its lifecycle. Failure to provide these policies and procedures accounts for the demise of the majority of interoperability initiatives. Missing from these failed efforts was a structured process for providing guidance on developing the policies and procedures needed to support the technology solution.

Working to fill that process void, the United States Coast Guard (USCG) Research and Development Center (R&DC) engaged in a year-long study which had as its goal the development of a method through which public safety agencies could construct the policies and procedures necessary to support communication interoperability. As a working member of the Golden Gate Safety Network (a voluntary consortium of public safety agencies working to achieve on-scene first responder interoperability in the San Francisco Bay Area), the R&DC achieved its goal by developing that process from lessons learned during an on-going interoperability effort in a major metropolitan region.

This guide is the product of that study. *It has been written for use by the individual tasked to "make interoperability happen."* It offers a structured process for creating the policies and procedures infrastructure, and contains step-by-step guidance for every phase of the interoperability effort.

The guide begins by showing how to create the initial working group, the first step in bringing together those public safety agencies needing to communicate during emergencies. It continues with information on how to develop, conduct, analyze and use the results from the needs assessment, the instrument that determines the interoperability requirements of each agency. It continues with advice on forming the basic and essential committees, conducting technical and operational field tests, and concludes with recommendations for implementing the technology solution and designing recurring training.

This guide contains extensive appendices which are, in many ways, the "backbone" of the process. The user will find in these appendices a ready-to-administer needs assessment, sample data collection sheets and message traffic for use during operational field tests, an equipment survey, an example of an Incident Command Structure-205 form which illustrates how to establish your talk groups, and example Memoranda of Understanding gathered from a variety of sources. Each item has been field-tested successfully during interoperability efforts and so can be used with confidence for their intended purposes.

The process for developing policies and procedures described in this guide can be applied to any level of interoperability initiative and by any individual tasked with achieving interoperability. The process can be adhered to strictly, or elaborated upon to fit specific regional and environmental requirements. For initiatives already underway,

you can select those parts of the process still needed to ensure successful completion of your project. The guide is a document with sufficient flexibility to be used under most circumstances. As you work your way through this interoperability process guide, we would like to hear your thoughts on how it worked for you and what suggestions, additions, or deletions you may have. Please feel free to contact Joan Silver at jsilver@rdc.uscg.mil.

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INTRODUCTION

Following the events of 9/11, the Department of Homeland Security designated interagency communications for first responders as one of its highest priorities. Programs were quickly initiated and significant funding was directed to this effort. As these initiatives moved forward, information from anecdotal accounts made it apparent that finding and emplacing technology solutions for interoperability would not be a problem -- nor would it prove to be the solution. These efforts showed that the greatest hurdle faced by public safety agencies in achieving interagency communication does not involve technology, but rather the creation of appropriate policies and procedures. The purpose of this report is to address that issue by providing guidance to public safety agencies in developing the policies and procedures needed for first responder communications interoperability.

The process for achieving interoperability described in this report is the product of a year-long United States Coast Guard (USCG) Research and Development Center (R&DC) effort. Throughout 2003 and into early 2004, the USCG R&DC was a working member of the Golden Gate Safety Network (GGSN), a voluntary consortium of public safety agencies working to achieve on-scene first responder interoperability in the San Francisco Bay Area. Participation in the GGSN provided the R&DC with a platform for examining and understanding the problems involved in achieving interagency communications.

The interoperability process for developing policies and procedures has five components: (1) establish initial working group, (2) conduct needs assessment and analyze results, (3) form committees, (4) conduct techn ical and operational field tests, and (5) implement technology solution and design recurring training. Users of this guide may find that they have already made significant progress in some of the areas described in this report and therefore need to use only parts of the process, while other public safety agencies may be starting from scratch. Regardless of starting point, regional and environmental needs should be your primary concern, understanding that there is no "one size fits all" interagency communications solution.

ESTABLISH THE INITIAL WORKING GROUP

Starting with an existing group. The first issue for any group wanting to achieve interoperability is bringing together regional agencies to work toward that goal. Quite often, a public safety group already exists, even though its intended purpose might be one other than working on interoperability. You can capitalize on the common denominator that brought these agencies together and leverage your relationship to build a new group, one whose focus is achieving first responder interoperability.

Starting from scratch. If there is no existing group in your region and you are starting from scratch, you can begin by bringing together a few public safety agency representatives who are also interested in achieving interoperability. In this instance

also, you can capitalize on existing relationships. Consider that you are likely reading this guide because you have a need for communications interoperability. If true, it is also likely that you are part of an interrelated public safety community and have contacts with individuals in these agencies. Given the events of 9/11, it's a safe bet that these contacts are faced with the same requirement to achieve interoperability as are you. To form your *initial* working group, contact some of the agency representatives with whom you have shared a good working relationship and with whom you share common interoperability issues and needs. Arrange with them for a preliminary meeting to discuss the possibility of working together.

Have a plan to share with your group. At your first meeting, have a plan for achieving interoperability ready to present to the attendees. Sharing this guide with them, or at least presenting the process contained in it, is one approach. This process enables you to move forward in a structured manner toward your goal of interoperability while you are developing the policies and procedures you will need to implement the technology you choose.

Keep your meetings focused. Each time your interoperability group meets, the purpose for the meeting should be stated, an agenda should be distributed, and action items should be assigned at the end of the meeting. At the beginning of each meeting, note the progress made by the group over the interim. Failure to show forward momentum may cause members to gradually drift away from the group feeling that nothing is being accomplished.

Add more agencies over time. For now, don't worry about bringing in every agency that ultimately needs to be part of the group. Other agencies can be brought in over time. In fact, it may even be easier to bring other agencies into the group when you can show that you have a plan and agencies that already support that plan. A caution: At this point, do *NOT* regard everything that your initial group decides as carved in stone. Be flexible and remain responsive to the issues raised by the group as they emerge.

Include members from key regional agencies. It is important to the success of your effort that you include in your group representatives from the key regional agencies. While all of the key players do not have to be members of the *initial* working group, the presence of one or two ensures that their issues and concerns are incorporated from the beginning and also serves to foster "ownership" in the project. The presence of these key players may potentially help in your effort to recruit new members as well.

Once the initial working group is underway, you can begin working on the other parts of the process, even while you continue to bring in new members. Two of the components, needs assessment and analysis and forming committees are concurrent processes. Be aware that needs assessment will continue as long as new members are being brought into the group.

CONDUCT NEEDS ASSESSMENT AND ANALYZE RESULTS

Importance of the needs assessment. It is *absolutely critical* to conduct a thorough needs assessment with every agency that will share the interoperability solution. Skipping this step, operating on hunches or incomplete data, or caving in to an aggressive member of the group who is pushing a "favorite" solution can result in adoption of the *WRONG* interoperability solution, a disastrous and costly mistake. To ensure that you work toward the appropriate solution, the needs assessment you use must cover every aspect of your interoperability needs and must be suited to your region and environment. A sample needs assessment appears in Appendix A.

Administering the needs assessment. It is important to be mindful of the manner in which the needs assessment is administered, a factor with significant potential for altering the accuracy of your data, if not done correctly. For optimal results, the survey should be administered *in a group session, one time only,* to those agency representatives who individually and collectively can answer the questions. Because the survey covers a broad range of issues, there is no one person in an agency who can answer all the questions. You will need to bring together people who have operational experience, technical expertise, and knowledge of budgets, policies, politics, and strategic direction.

Provide agencies with advance copy of needs assessment. Prior to administering the survey, it is a good idea to provide each agency with a copy (paper or electronic) and suggest to them that they review the items *before* they try to identify the people who can answer the questions. At the same time, it helps to also provide the agency with a list of survey outcomes and ways in which the data can be used (see page 4). When agencies understand the value of the data and how it will be used, they are more willing to cooperate and put forth their best efforts.

Role of the facilitator. Someone external to the agency responding to the needs assessment should adopt the role of facilitator and preside over survey administration. The facilitator should be the only person recording the responses, leaving agency participants free to reflect on the questions, discuss the issues, and come up with the best answers, as a group.

Benefits of group administration. Many benefits derive from this method of needs assessment administration. Agencies are more willing to cooperate under these circumstances versus distribution of a lengthy assessment to several employees, who will each be responding individually. Group administration affords everyone the opportunity to ask clarifying questions, ensuring that all respondents are interpreting the items in the same way. Ambiguity and idiosyncratic interpretations are minimized under these conditions. You can have confidence in your data because they are the product of informed consensus. This outcome contrasts significantly with data obtained from anonymous (and possibly reluctant) participants, who are perhaps responding to items for which they do not have the requisite knowledge.

Disadvantages of individual administration. The clear benefits of this method of survey administration argue strongly against handing out paper copies to several members of an agency, and then trying to "average" their responses. Consider this example from the needs assessment: "Is a dispatcher required to set up and break down cross patches?" Some within an organization will understand the item and be able to respond with accurate information. Others, because of their position, might not be privy to this type of information. However, they may feel compelled to respond when the choice is a simple "yes" or "no." Understanding that this is a possibility and continuing with the example, assume you gave individual copies of the assessment to eight representatives from one agency. Four of them said "yes." Four said "no" in response to the item.   Now, who is right? You're going to have to spend a lot of time and energy backtracking to find out which response is correct -- and this just for one item. Under these circumstances, it will be difficult, perhaps impossible, for you to know what information you can trust from these questionnaires, and of course, having the correct information is critical to the success of your project.

Uses of survey results. As discussed previously, administration of the needs assessment will continue as long as new members join your group. However, you do not have to wait until the circle is complete to begin to compile your data and figure out where you need to be heading. Once you have the results from five or six key agencies, you can begin to use them for both short-term and long-term planning. Survey results either directly yield these kinds of information or can be used to construct this information:

❑ Agencies who need to be included in your group
❑ Agencies you currently *have* interoperability with during frequently occurring emergencies, major incidents, and large-scale disasters
❑ Agencies you *need to have* interoperability with during frequently occurring emergencies, major incidents, and large-scale disasters
❑ Your current level of regional interoperability, expressed as a percentage
❑ The top six agencies you need to talk to under each of the three emergency levels
❑ Need for protected or encrypted technology
❑ The lead agency at various types of incidents
❑ An overview of existing communication equipment in each agency
❑ Projection of agencies needs/wishes for future communication equipment
❑ Radio frequencies used by each agency

Example data. Figure 1 is an example of actual data from six agencies involved in a regional interoperability effort. Each agency provided information on the kinds of incidents they respond to under three conditions: (1) frequently occurring emergencies (e.g. search and rescue, crimes in progress) (2) major incidents (e.g. homicides, law enforcement pursuits) and (3) large-scale disasters (e.g. earthquakes, terrorist attack). Next they listed the public safety agencies that responded with them to those incidents. Finally, they indicated those agencies they could talk to *BY RADIO, directly, in real time, and without dispatch.* The data show clearly that as the severity of the emergency increases, their level of interoperability decreases significantly.

REQUIRED VS. ACTUAL CONNECTIONS VIA RADIO
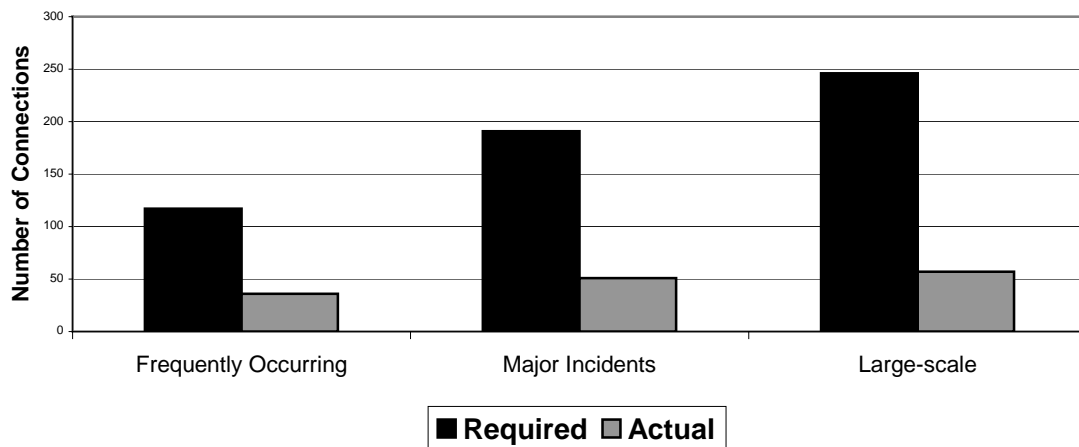
Figure 1. Required versus actual connections via radio.

Agency baseline data. Figure 2 depicts the baseline interoperability capabilities of these same agencies. First responders, on-scene, from the #1 agency, could communicate with only approximately half of the agencies they needed to talk to during any type of emergency.   The agency in sixth place could communicate with virtually no one. What is particularly distressing is that this agency is one that *EACH* of the other agencies needs to talk to during every type of emergency.

AGENCY	PERCENT FREQUENTLY OCCURING EMERGENCIES	PERCENT MAJOR INCIDENTS	PERCENT LARGE-SCALE DISASTERS OR INCIDENTS
1	58	53	44
2	47	40	29
3	27	23	15
4	19	15	13
5	0	9	11
6	6	4	4

Figure 2. Percent interoperability by agency.

FORM COMMITTEES

Essential committees. Three committees are basic and essential for development of the appropriate policies and procedures for your interoperability group: (1) governance/executive steering committee, (2) technology committee, and (3) implementation/recurring training committee. Others can be added, if and as needed,

but these three are critical. It is *most important* that these committees be *highly interactive*, and that the governance/executive steering committee assume responsibility for group oversight. Each committee makes essential contributions to the process. Their various roles and responsibilities are delineated below.

Governance/Executive Steering Committee

- Provides oversight to the interoperability project
- Spearheads the effort to define the interoperability vision for the project
- Ensures that this vision addresses the nature, scope and objectives of the project
- Facilitates cooperation and collaboration among principals in participating agencies
- Establishes project timelines
- Creates agendas and chairs general meetings of all committees
- Publishes meeting minutes
- Furnishes group with member contact information
- Recruits members
- Serves as conduit for information
- Publicizes project within local, state and federal entities
- Publicizes project with media
- Seeks support from public officials
- Leads effort to pursue grant monies
- Develops the strategy for implementing interoperability
- Formulates and approves policy to guide implementation and operation of the interoperability system
- Works with group to identify and address implementation issues, including resolving conflicts and overcoming obstacles affecting interoperability

Technology Committee

- Composed of communication experts from member agencies
- Researches available technologies
- Arranges for vendor demonstration of technologies
- Identifies the technology or technologies needed for interoperability based on needs assessment
- Conducts comprehensive survey of each agency's communications equipment
- Compiles data from survey to establish existing inventory and determine equipment needs for new technology
- Advises agencies on purchase, installation and maintenance of new technology
- Works with Implementation/Training committee to design technical and operational field tests and determine training needs prior to tests, as well as recurring training
- Serve as advisors during technical and operational field tests
- Contributes to lessons learned from technical and operational field tests

Implementation/Training Committee

- Designs, conducts, and evaluates technical and operational field tests
- Conducts after-action reviews
- Writes and disseminates test reports
- Designs training
- Creates Memoranda of Understanding (MOU) and distributes for approval and signatures
- Develops and writes standard operating procedures
- Develops implementation procedures
- Oversees implementation-related activities, including infrastructure and equipment

CONDUCT TECHNICAL AND OPERATIONAL FIELD TESTS

Importance of practice. First responders must be fully versed in the operation of an interoperability technology *prior* to an emergency. All of the policies and procedures for successful interoperability must be worked out well ahead of time, and rehearsed, and rehearsed and rehearsed. Without preplanning and rehearsal, even the most expensive and sophisticated of technologies will be virtually useless during an emergency. Much of this can be accomplished during technical and operational field tests.

When to start planning tests. When you have reached the point in this process where your group has either purchased a technology or you have identified existing systems which will accomplish regional interoperability, you can now begin to plan the technical and operational field tests that will ensure all players understand their interoperability roles and responsibilities *prior* to an actual emergency, and that relevant policies and procedures are in place.

Start tests with a small group. Rather than wait to connect each and every agency that will ultimately participate in your interoperability solution, you can begin your technical and operational field tests with as few as three or four public safety agencies. Starting small makes achieving interoperability a more manageable task. After ironing out technical and operational problems with a small group, it becomes easier to add other agencies to future tests.

Baseline tests. You may want to conduct a baseline field test so that later you can objectively assess the improvements you have made in interoperability. The baseline test doesn't need to be an elaborate, long, drawn-out affair. Rather, at a designated date and time, have the first responders from each agency try to talk to each other, *directly, by radio, in real time, and without dispatch, using their legacy equipment*. Message traffic need not be complex, but rather sufficient in content to allow assessment of the quality of transmission. There is no need to have a script or scenario; simply conduct a communications check. When you have finished this exercise, you should have a good idea of your current interoperability gaps, and you will know what holes need plugging. Some sample data collection sheets and message

traffic that can be used for baseline and for ensuing *operational* field tests are in Appendices B, C and D.

Assess training needs prior to tests. Successful technical and operational field tests require organization and preparation. Training needs must be assessed prior to any test. Individuals who need to be trained must be identified, as well as the type of training they require. The type of training will differ depending upon the individual's function in the agency (i.e., equipment operator, dispatcher, first responder).

Scheduling training. Other decisions also have to be made regarding training. You need to decide how to schedule the training. That decision depends on whether everyone who needs it gets it before testing, or whether you stagger the training opportunities. You can stagger the training by giving it initially only to those individuals who will be on duty during the technical and operational tests, leaving the other shifts to be trained at a later point in time. Your decision could be driven by financial considerations. If a contractor is doing the training, cost may dictate that you identify and train everyone at the same time to avoid funding multiple sessions.

Contractor provided training. If contractor training is required for your interoperability solution, more flexibility might be had by pooling agency resources, with everyone splitting the cost on a per student basis. Working with other agencies, you might be able to have multiple sessions for different shifts over time without driving up your costs. This option might afford you the opportunity to provide training for your day shift personnel first (the ones likely to be in your first series of technical and operational tests) and then the second and third shifts at a later date.

In-house training. It's possible that you have the in-house expertise to conduct your own training. If so, you have built-in flexibility in establishing training programs and schedules. Be completely sure, however, that you can really do a good job of it, and that you understand how to assess student performance to determine if tasks have been learned to a satisfactory degree of proficiency.

Importance of training. The importance of adequate training cannot be emphasized strongly enough. Often, agencies strapped for time and money, resort to the rationalization that "if you just put this technology in front of the users, they will figure it out for themselves and become proficient at it." It is rare that this actually turns out to be true, and you sure don't want to take this kind of chance when your own life may depend on whether a colleague learned to operate a system on his own time. Short-changing training is a frequent reason why the successful implementation of new systems fails. Providing the appropriate and necessary training when and where needed can save a world of headaches on down the road.

Skill decay. Once you have provided training, you must have a plan in place to keep skills current. Training must be followed by immediate and recurring practice or the new skills will decay quickly, wasting your training dollars and training hours. You can probably think of an example of this from your own experiences. Recall a time when

you learned a new skill, perhaps a computer application like word processing or a spreadsheet, and then did not use it for a period of time after returning to your job. When the moment arrived where you eventually needed to use this skill, you most likely found that your memory banks were failing and you could not use the application effortlessly and/or correctly.

Keeping skills current. To keep interoperability skills current, recurring training is recommended once a week. This training need not be complex or time-consuming. A few minutes each week spent in communication checks with other agencies will suffice. Providing job aids, where appropriate, also helps to keep skills current. Seek out opportunities to use the technology solution on a day-to-day basis. Plan to use it during any special events which involve interagency cooperation and communication. All of these activities will prevent skill decay.

Equipment surveys. Acting concurrently with the training committee, the technology committee will be designing and distributing a comprehensive equipment survey to each of the agencies participating in the technical and operational field tests. An example survey appears in Appendix E. The group using this survey had chosen their technology and was assessing their needs relative to that technology. Although the needs assessments that you administered previously to groups from each agency gave you an overview of their communication capabilities, more detail is needed to accomplish the physical interconnections *after* the group has adopted a technology solution. This survey is meant only for the technology experts in each agency. They are the ones with the necessary expertise to respond to the questions.

Pretest activities. When the equipment surveys have been returned to the technology committee, they should assemble the information, figure out what equipment is needed to install and operate the technology, and work with the agencies to help them acquire these items prior to any test. The interoperability solution itself may dictate the nature of these pretest activities (e.g., arranging for radio exchanges, frequency exchanges). The communications experts from each agency bear the primary burden during this part of the process. They have to ensure that the coordination, organization and structure needed for this first technical test and for all that follow are in place. They will be working very closely with the Implementation/Training committee at this point in the process.

Technical field tests. Your first field test will likely be strictly technical in nature and solely for the purpose of establishing and verifying that the communication links are operational among the participating agencies. It is important to adopt a "test-fix-test" mentality during these technical tests. Be sure to carefully document everything that is done so that you do not repeat your mistakes and to ensure that you follow the established procedures during the next and following tests. This first technical field test should be followed by as many other as are needed to ensure that your equipment functions as it should, that people know how to operate it, that you have the necessary coverage, and that you have solved all of your technical problems.

Vendor assistance. Sometimes the vendor of the technology will offer their services as consultants during your tests. This *can be* a good deal for participating agencies and is one which should be considered.

Operational field tests. When the technical tests have been completed to the satisfaction of the communications experts, the operational field tests can begin. Ultimately, your goal is to determine whether your first responders can talk to each other *directly, by radio, in real time, without dispatch, on-scene.* The operational field tests need not be large-scale, costly, or time-consuming, but rather simple communications checks among the participating agencies. They could even be conducted as part of on-going training requirements for the agencies involved. Keeping the goal of first responder interoperability in mind, you'll need to determine who should be part of the operational field test. If dispatchers are needed for interoperability, they must be part of the exercise. If field command posts are necessary, they too are part of the exercise. At some point, you will need to include command level personnel and any others who would be part of an emergency response. Start small. After successful testing, other agencies can be added to the mix. Keep repeating this process until you have achieved interoperability with all agencies.

The Incident Command System. A useful tool for establishing your talk groups during these exercises is the Incident Command System (ICS)-205 form. The ICS-205 form is used in conjunction with the Incident Command System employed by many public safety agencies throughout the U.S. The ICS is a management tool for the command, control and coordination of resources at the scene of an emergency. It consists of procedures for organizing personnel, facilities, equipment and communications on-scene.

The ICS-205. An example of the ICS-205 communication form is in Appendix G. This form is filled out *prior* to interoperability tests. It aids in developing communication structure and organization for the test by determining the composition of your talk groups and frequency usage. You can get the form online by going to any search engine and simply typing in "ICS-205."

Agency review of ICS-205. Although a valuable tool, the ICS-205 is not in and of itself a "magic pill." There are some cautions to observe when you use this form. Make sure that all agencies involved in the test review the document well in advance to ensure that there is a common understanding and interpretation of the contents. Any frequency plan put forth on the ICS-205 must be explained in detail, using familiar terminology, understandable by all users. What may seem like a trivial detail to the creators of the ICS-205 form can end up being a major showstopper during an exercise.

The "first commandment" of interoperability. Message traffic during *ANY* interagency communication *MUST BE IN PLAIN ENGLISH.* Agency specific codes are *NEVER* to be used. This "first commandment" of interoperability applies to *ALL* interagency communications, no matter when or how they occur -- technical or operational field tests, field training exercises or real-life emergencies. Your agency

specific codes are a foreign language to the receiver of the message from another agency, and there is no time to learn how to translate this language during an emergency. All agencies must strictly adhere to this rule during field tests and exercises to ensure that they do not lapse into their own codes during an emergency.

Field Training Exercises. At some future date, when most all of the public safety agencies have entered the group and you have successfully completed technical and operational field tests, you may want to consider a full-blown field training exercise to further test and practice the skills you have learned, putting them into a complex and realistic setting. Your interoperability group will likely develop the scenario for this exercise based on your actual regional needs or future projected needs (e.g., a terrorist attack). No doubt, as a public safety official, you have participated in many such exercises already. This time, however, you will be adding the element of successful interoperability, from the level of the incident commander to the first responder on-scene.

IMPLEMENT SOLUTION/DESIGN RECURRING TRAINING

Importance of Memoranda of Understanding. All of the activities described previously can be accomplished without a Memorandum of Understanding (MOU) in place among the agencies involved. *"Can be"* are the operative words. However, by the time a group reaches this point in the process, if an MOU is not in place, it is now time to tend to these matters. You may all be wonderful friends and have worked together cooperatively throughout this process, but experience has shown that "gentlemen's agreements" fly out the window when a serious incident happens. The signing of an MOU assures the execution of your policies and procedures during an emergency.

Example MOUs and role of operations guide. Sample MOUs gathered from a variety of sources are in Appendix G. They vary in length and complexity. In most cases, it will be to your advantage to keep the MOU as simple as possible – kind of a "we agree to agree" document. Adopting this approach will generally make it easier to get the MOU passed through the various legal departments involved. You can support the MOU with a comprehensive operations guide which spells out in detail all of the policies, procedures and protocols needed to make interoperability work in your region. Then, if anything changes, you have only to amend your operations guide. You don't need to write a new MOU and go through the entire legal process all over again.

Recurring training. Our final topic is one of critical importance, that of recurring training. The topic of skill decay has been previously discussed and must be addressed yet again. When a crisis occurs, everyone involved should be completely comfortable with the communications technology. All behaviors should be to the "automatic level," that is, you don't have to actively think about using the technology – it comes "naturally." Keeping skills fresh can be accomplished with relative ease. Everyone who is party to the MOU can participate in a communications check at least once a week (with each shift performing its own check). Look for occasions to use the technology during

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planned events in your area, giving you real-world practice in its use. Best of all, try to use the technology as much as possible on a daily basis, guaranteeing that during a crisis you will be as comfortable using the technology as you are with your television remote. Seek any and all opportunities to practice interoperability with your regional partners. Knowing what to do, when to do it, and how to do it can literally mean the difference between life and death during an emergency.

NOTE TO USERS

The USCG R&DC hopes that this manual proves useful to you. As you make your way through the interoperability process with other public safety agencies, we would appreciate your thoughts, comments and suggestions. Please let us know what worked for you, if anything did not, and where you think improvements could be made.

Appendix A
INTEROPERABILITY NEEDS ASSESSMENT

Adapted From *"Why Can't We Talk?"*
National Task Force On Interoperability
February 2003

ASSESSING YOUR LEVEL OF INTEROPERABILITY

FREQUENTLY OCCURRING EMERGENCIES
Some types of emergencies occur on a frequent basis. These include major traffic accidents, violent crimes, hostage situations, drownings, industrial accidents, and similar incidents. Think about what types of incidents occur frequently in your jurisdiction, region, or State.

Incidents that occur frequently:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10._____

11. _____

12. _____

13. _____

14. _____

15. _____

Agencies that typically respond to these incidents: Law Enforcement agencies (Police, Sheriff, FBI, State Patrol, Agencies from other jurisdictions, etc.)   Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

	YES	P	UnP	E	UnE			YES	P	UnP	E	UnE
1. _____	__	__	__	__	__	6. _____		__	__	__	__	__
2. _____	__	__	__	__	__	7. _____		__	__	__	__	__

3. _____ __ __ __ __ __   **8.** _____ __ __ __ __ __

4. _____ __   __ __ __ __   **9.** _____ __ __ __ __ __

5. _____ __   __ __ __ __   **10.**_____ __ __ __ __ __

INTEROPERABILITY NEEDS ASSESSMENT

Top Six Agencies: **Top Six Agencies Prioritized**

_____   **1.** _____

_____   **2.** _____

_____   **3.** _____

_____   **4.** _____

_____   **5.** _____

_____   **6.** _____   ☐

Emergency Service Agencies (Fire, Emergency Medical Services, Hazmat, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

YES   P UnP E UnE   YES P UnP E UnE

1. _____ __ __ __ __ __   **6.** _____ __ __ __ __ __

2. _____ __ __ __ __ __   **7.** _____ __ __ __ __ __

3. _____ __ __ __ __ __   **8.** _____ __ __ __ __ __

4. _____ __ __ __ __ __   **9.** _____ __ __ __ __ __

5. _____ __ __ __ __ __   **10.** _____ __ __ __ __ __

INTEROPERABILITY NEEDS ASSESSMENT

Top Six Agencies: **Top Six Agencies Prioritized**

_____   **1.** _____

_____   **2.** _____

_____   **3.** _____

_____   **4.** _____

_____   **5.** _____

_____   **6.** _____

Public Infrastructure Agencies (Transportation, Public Works, Utility, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

		YES	P	UnP	E	UnE			YES	P	UnP	E	UnE
1.	_____	__	__	__	__	__	6.	_____	__	__	__	__	__
2.	_____	__	__	__	__	__	7.	_____	__	__	__	__	__
3.	_____	__	__	__	__	__	8.	_____	__	__	__	__	__
4.	_____	__	__	__	__	__	9.	_____	__	__	__	__	__
5.	_____	__	__	__	__	__	10.	_____	__	__	__	__	__

INTEROPERABILITY NEEDS ASSESSMENT

Top Six Agencies:

_____

_____

_____

_____

_____

_____

Top Six Agencies Prioritized

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Step 1. Put a checkmark next to each of the agencies that can directly and without dispatch communicate via radio on a real-time basis with each of the other agencies identified.

Step 2. Indicate how you need to communicate with each agency listed above. P = Protected UnP = Unprotected E = Encrypted UnE = Unencrypted

Step 3. From each of the three categories listed above, select the top six agencies with whom you need to communicate

Step 4. Prioritize these 6 agencies

INTEROPERABILITY NEEDS ASSESSMENT

MAJOR CRIMES OR INCIDENTS

Major crimes or incidents include such events as bank robberies, child kidnappings, large-scale fires, chemical leaks, large-scale industrial accidents, train derailments, and similar incidents. Think about what types of major crimes or incidents have occurred or could occur.

Major crimes or incidents that have occurred or could occur:

1. _____   6. _____   11. _____

2. _____   7. _____   12 _____

3. _____   8. _____   13 _____

4. _____   **9.** _____   **14** _____

5. _____   **10.** _____   **15** _____

Agencies that have or would likely respond to these incidents: Law Enforcement agencies (Police, Sheriff, FBI, State Patrol, Agencies from other jurisdictions, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

	YES	P	UnP	E	UnE			YES	P	UnP	E	UnE
1. _____	—	—	—	—	—	**6.** _____		—	—	—	—	—
2. _____	—	—	—	—	—	**7.** _____		—	—	—	—	—
3. _____	—	—	—	—	—	**8.** _____		—	—	—	—	—
4. _____	—	—	—	—	—	**9.** _____		—	—	—	—	—
5. _____	—	—	—	—	—	**10.** _____		—	—	—	—	—

INTEROPERABILITY NEEDS ASSESSMENT

Emergency Service Agencies (Fire, Emergency Medical Services, Hazmat, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

	YES	P	UnP	E	UnE			YES	P	UnP	E	UnE
1. _____	—	—	—	—	—	**6.** _____		—	—	—	—	—
2. _____	—	—	—	—	—	**7.** _____		—	—	—	—	—

A-7

3. _____ __ __ __ __ __   **8.** _____ __ __ __ __ __

4. _____ __ __ __ __ __   **9.** _____ __ __ __ __ __

5. _____ __ __ __ __ __   **10.**_____ __ __ __ __ __

Public Infrastructure Agencies (Transportation, Public Works, Utility, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

	YES	P	UnP	E	UnE			YES	P	UnP	E	UnE

1. _____ __ __ __ __ __   **6.** _____ __ __ __ __ __

2. _____ __ __ __ __ __   **7.** _____ __ __ __ __ __

3. _____ __ __ __ __ __   **8.** _____ __ __ __ __ __

4. _____ __ __ __ __ __   **9.** _____ __ __ __ __ __

5. _____ __ __ __ __ __   **10.**_____ __ __ __ __ __

INTEROPERABILITY NEEDS ASSESSMENT

Top Six Agencies: **Top Six Agencies Prioritized**

_____   1. _____

_____   2. _____

_____   3. _____

_____   4. _____

_____   5. _____

_____   6. _____

Step 1. Put a checkmark next to each of the agencies that can directly and without dispatch communicate via radio on a real-time basis with each of the other agencies identified.
Step 2. Indicate how you need to communicate with each agency listed above. P = Protected UnP = Unprotected E = Encrypted UnE = Unencrypted
Step 3. From each of the three categories listed above, select the top six agencies with whom you need to communicate
Step 4. Prioritize these 6 agencies

INTEROPERABILITY NEEDS ASSESSMENT

LARGE-SCALE DISASTERS OR INCIDENTS

Large-scale disasters and incidents include events like hurricanes, tornadoes, earthquakes, airplane crashes, school shootings, terrorist attacks, and similar incidents. Think about what types of incidents have or could occur.

Large-scale disasters or incidents that have or could occur:

1. _____
2. _____
3. _____
4. _____
5. _____

6. _____
7. _____
8. _____
9. _____
10._____

11. _____
12. _____
13. _____
14. _____
15. _____

Agencies that have or would likely respond to these incidents: Law Enforcement agencies (Police, Sheriff, FBI, State Patrol, Agencies from other jurisdictions, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

		YES	P	UnP	E	UnE
1.	_____	__	__	__	__	__
2.	_____	__	__	__	__	__
3.	_____	__	__	__	__	__
4.	_____	__	__	__	__	__
5.	_____	__	__	__	__	__

		YES	P	UnP	E	UnE
6.	_____	__	__	__	__	__
7.	_____	__	__	__	__	__
8.	_____	__	__	__	__	__
9.	_____	__	__	__	__	__
10.	_____	__	__	__	__	__

INTEROPERABILITY NEEDS ASSESSMENT

Emergency Service Agencies (Fire, Emergency Medical Services, Hazmat, etc.) Key to abbreviations: P = Protected; UnP = Unprotected; E = Encrypted; UnE = Unencrypted

		YES	**P**	**UnP**	**E**	**UnE**			**YES**	**P**	**UnP**	**E**	**UnE**
1.	_____	__	__	__	__	__	6.	_____	__	__	__	__	__
2.	_____	__	__	__	__	__	7.	_____	__	__	__	__	__
3.	_____	__	__	__	__	__	8.	_____	__	__	__	__	__
4.	_____	__	__	__	__	__	9.	_____	__	__	__	__	__
5.	_____	__	__	__	__	__	10.	_____	__	__	__	__	__

Public Infrastructure Agencies (Transportation, Public Works, Utility, etc.)

		YES	**P**	**UnP**	**E**	**UnE**			**YES**	**P**	**UnP**	**E**	**UnE**
1.	_____	__	__	__	__	__	6.	_____	__	__	__	__	__
2.	_____	__	__	__	__	__	7.	_____	__	__	__	__	__
3.	_____	__	__	__	__	__	8.	_____	__	__	__	__	__
4.	_____	__	__	__	__	__	9.	_____	__	__	__	__	__
5.	_____	__	__	__	__	__	10.	_____	__	__	__	__	__

INTEROPERABILITY NEEDS ASSESSMENT

Top Six Agencies: **Top Six Agencies Prioritized**

_____   **1.** _____

_____   **2.** _____

_____   **3.** _____

_____   **4.** _____

_____   **5.** _____

_____   **6.** _____

Step 1. Put a checkmark next to each of the agencies that can directly and without dispatch communicate via radio on a real-time basis with each of the other agencies identified.

Step 2. Indicate how you need to communicate with each agency listed above. P = Protected UnP = Unprotected E = Encrypted UnE = Unencrypted

Step 3. From each of the three categories listed above, select the top six agencies with whom you need to communicate

Step 4. Prioritize these 6 agencies

INTEROPERABILITY NEEDS ASSESSMENT

ASSESSING RADIO COMMUNICATIONS CAPABILITY

Radio communication systems are expensive and before a decision is made to either update or purchase a system, there must be an assessment of the current communication system and future needs. The following is a guide that builds on Assessment Tool #1 and is designed primarily for use by public safety officials who need to assess the status of the agency's or jurisdiction's system. Public officials at all levels can benefit from the information that this tool elicits and are encouraged to work with their public safety officials completing this assessment. ***This tool is not intended to answer all questions or concerns, but rather, it provides a baseline upon which planning discussions can begin.*** Officials using this assessment are encouraged to modify it based on their agency's or jurisdiction's needs.

Please note that where the term "agency" appears, it is also intended to mean jurisdiction, region, or State, depending upon the user.

Descriptive Information

1. Which of the following best describes the typography/terrain in which your agency operates? (check all that apply)

_____   Coastal or intracoastal waterway   _____   Mountainous

_____   Relatively flat   _____   Heavily forested

_____   Rolling hills

2. Does your jurisdiction or a portion of your jurisdiction include many high-rise buildings?

_____ Yes   _____ No

Operations Information

1. Does your agency have at least one radio channel solely designed for communicating with other agencies?

_____ Yes   _____ No (If "no," why not?) _____
                                        INTEROPERABILITY NEEDS ASSESSMENT

If "yes," how many channels does your agency have? _____

2. Which of the following best describes your agency's arrangement for dispatching calls?

_____ Agency/department does not own its own dispatch operations
_____ Dispatch is part of a combined dispatch center (e.g., Law Enforcement, Fire, EMS)
_____ Dispatch is a contracted service
_____ Dispatch is controlled by a commercial operator
_____ Other (specify) _____

3. What is the primary language used by your agency when communicating with other agencies or organizations?

_____ "Plain" English
_____ Code
_____ Other (specify) _____

4. Which radio frequencies does your agency use to communicate with other public safety and/or public service organizations? (check all that apply)

_____ Does not apply   _____ Lowband VHF (25-50 MHz)
_____ Highband VHF (150–174 MHz)   _____ Federal band UHF (406-420 MHz)
_____ Lowband UHF (450-470 MHz)   _____ Lowband UHF TV Sharing 470 – 512 MHz

_____ 800 MHz (806-869 MHz)   _____ Other _____

5. Does your agency have inter-governmental agreements with neighboring jurisdictions for mutually defined calls for service or disasters (e.g. mutual aid agreements)?

Calls for Service   _____ Yes   _____ No
Disasters   _____ Yes   _____ No

INTEROPERABILITY NEEDS ASSESSMENT

Information and Training

1. Does your agency participate in joint training exercises with other agencies or organizations that involve the actual use of *wireless* communications equipment?

_____ Yes   _____ No (skip to the next section)

2. Regarding question #2, indicate the levels of other agencies/organizations that participate in the joint training exercises. Include both governmental and non-governmental agencies.

_____ Federal Level   _____ State Level   _____ Local Level

3. In what year did your agency most recently participate in joint training exercises that involved the actual use of wireless communication equipment? _____

Communication Systems

1. Indicate the types of communication equipment used by your agency (check all that apply).

_____ Handheld portable radio _____ Vehicle-mounted mobile radio
_____ Pagers _____ Citizens band radios
_____ Amateur radio _____ Cellular phone/voice
_____ Telephone line (landline) _____ Mobile data terminal
_____ Fax line (Dumb terminal)
_____ Cellular fax _____ Helicopter radio
_____ Mobile laptop computer _____ Personal Digital Assistant
_____ Fixed-wing aircraft radio _____ Other _____

2. Does your agency SHARE the infrastructure for its land mobile radio base system with other organizations?

_____ Yes _____ No

INTEROPERABILITY NEEDS ASSESSMENT

3. Which of the following BEST describes your agency's communications arrangements?

_____ Independently owned and operated communications center used exclusively by our department

_____ Part of a communications center that serves several public safety and/or public service organizations in our jurisdiction

_____ Part of a multi-agency, multi-jurisdictional shared communications center

_____ Other (Please explain)

_____

4. Does your agency own or lease its PRIMARY land mobile radio system?

_____ Own   _____ Lease   _____ Does not apply

5. How many of each of the following are in your land mobile radio system?

_____ Base Stations _____ Repeaters   _____ Control Stations

6. Approximately how old is your CURRENT land mobile radio system?

_____ Year(s) old

7. Does your agency handle BOTH digital and analog radio systems?

Analog   _____ Yes   _____ No
Digital   _____ Yes   _____ No

8. Which best describes your PRIMARY land mobile radio system?

_____ Conventional   _____ Trunked

INTEROPERABILITY NEEDS ASSESSMENT

9. Identify the radio frequencies your agency CURRENTLY uses for VOICE-ONLY communication by indicating the current NUMBER of channels in each band.

Currently Uses   Current number of VOICE-ONLY Channels

Lowband VHF (25–50 MHz)   _____

Highband VHF (150-174 MHz) _____
UHF (406-512 MHz) _____
800 MHz (806-869 MHz) _____
Other: _____ _____

10. Identify the radio frequencies your agency CURRENTLY uses for DATA-ONLY communication by indicating the current NUMBER of channels in each band.

Currently Uses Current number of DATA-ONLY Channels

Lowband VHF (25–50 MHz) _____
Highband VHF (150-174 MHz) _____
UHF (406-512 MHz) _____
800 MHz (806-869 MHz) _____
Other: _____ _____

11. Identify the radio frequencies your agency CURRENTLY uses for ALTERNATE VOICE & DATA by indicating the NUMBER of channels in each band.

Currently Uses Current number of ALTERNATE VOICE-ONLY & DATA Channels

Lowband VHF (25 – 50 MHz) _____
Highband VHF (150-174 MHz) _____
UHF (406-512 MHz) _____
800 MHz (806-869 MHz) _____
Other: _____ _____

INTEROPERABILITY NEEDS ASSESSMENT

12. Does your agency have the ability to patch across channels?

_____ Yes   _____ No

13. How many simultaneous cross patches can be set up?   _____

14. Is a dispatcher REQUIRED to set up and break down the patch?

_____ Yes   _____ No

15. To what extent does topography/terrain hinder the effectiveness of your land mobile radio base system (where 1 = no problem to 5 = major problem)?

1   2   3   4   5

16. To what extent does the presence of high-rise buildings hinder the effectiveness of your land mobile radio base system (where 1 = no problem to 5 = major problem)?

1   2   3   4   5

17. Who handles your agency's RADIO SPECTRUM LICENSING issues?

_____ My agency   _____ The State

_____ A regional group   _____ Other _____

_____ The county   _____ Don't know

18. Does your agency PAY outsiders for radio spectrum frequency coordination services?

_____ Yes   _____ No

19. How many times does your agency interact with a radio spectrum frequency coordinator in a typical year?

_____ times a year

20. Indicate ALL services your agency USES and PLANS TO USE within the next five (5) years.

	Currently Use	Plan to Use
Cellular Digital Packet Data (CDPD)	_____	_____
Personal Communications Systems (PCS)	_____	_____
Specialized Mobile Radio (SMR)	_____	_____
Mobile Satellite System	_____	_____
Global Positioning System (GPS)	_____	_____
Paging	_____	_____
Cellular/Voice	_____	_____
Cellular Switched Data	_____	_____
Local Multi-Point Distribution Service	_____	_____
(LMDS)/Multi-Point		
Multi-Channel Distribution		
Services (MMDS)		

21. Does your agency have plans to replace or substantially upgrade its land mobile radio system within the next ten years?

_____ Yes   _____ No

22. If yes, what system do you have in mind?

_____

23. Does your agency plan to use BOTH analog and digital radio systems?

_____ Yes   _____ No   _____ Don't know

24. What is your agency's preference for its NEXT land mobile radio system?

_____ Conventional (not trunked)   _____ Trunked   _____ Don't know
                       INTEROPERABILITY NEEDS ASSESSMENT

25. What is the total number of mobile data terminals and/or laptop computers your agency CURRENTLY uses?

_____ Mobile Data Terminals (Dumb Terminals)   _____ Mobile Laptop Computers

26. Regarding mobile data terminals and mobile laptop computers, identify the types of WIRELESS DATA communication (not voice) your agency currently USES and PLANS TO USE within the next 2 years?

	Currently Use	Plan to Use
Free Text	_____	_____
Database Information	_____	_____
Still Images (e.g. photos or maps)	_____	_____
E-mail	_____	_____
Report Writing	_____	_____

27. Has the lack of wireless communications interoperability ever hampered your agency's ability to respond to a call?

_____ Yes   _____ No

Appendix B
SAMPLE DATA COLLECTION SHEETS FOR OPERATIONAL FIELD TESTS
To be used by agencies sending and receiving messages

COMMUNICATIONS CHECK

DATA COLLECTOR: _____

LOCATION: _____

CALCORD – COMMAND GROUP (CG)

<u>QUALITY OF CONNECTION SCALE</u>

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

<u>MSG 1CG – SFPD MARINE TO</u>
CG BOAT, GGB, CHP

QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

COMMENTS:
_____
_____
_____

<u>MSG 2CG – SONOMA MARINE TO:</u>
 SFPD, SFPD COM2, GROUP, CHP

QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____

<u>MSG 3CG – RICHMOND MARINE TO:</u>
USPP, NPS, OES, NAT'L GUARD, CHP

QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____
_____

<u>MSG 4CG – OES TO:</u>
 CG BOAT, GGB, MARIN, CHP

QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____
_____

SAMPLE DATA COLLECTION SHEETS FOR OPERATIONAL FIELD TESTS

DATA COLLECTOR: _____

LOCATION: _____

QUALITY OF CONNECTION SCALE

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

MSG 5CG – SFPD TO:
USPP, SFPD MARINE, GROUP, NAT'L GUARD, CHP   QUALITY OF CONNECTION

COMMENTS

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

MSG 6CG – NPS TO:
SONOMA MARINE, RICHMOND MARINE, SFPD COM2, CHIP   QUALITY OF CONNECTION

_____

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

MSG 7CG – CG BOAT TO:
SFPD, USPP, OES, NAT'L GUARD, CHP   QUALITY OF CONNECTION

_____

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

MSG 8CG – GROUP TO:
MARIN, SFPD MARINE, SFPD COM2, CHP   QUALITY OF CONNECTION

_____

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

MSG 9CG – GGB TO:
SONOMA MARINE, RICHMOND MARINE, NPS, CHP   QUALITY OF CONNECTION

_____

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

MSG 10CG – USPP TO:
 CG BOAT, MARIN, GGB, CHP   QUALITY OF CONNECTION

_____

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

SAMPLE DATA COLLECTION SHEETS FOR OPERATIONAL FIELD TESTS

DATA COLLECTOR: _____

LOCATION: _____

QUALITY OF CONNECTION SCALE

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

COMMENTS:

MSG 11CG – SFPD COM2 TO:
USPP, OES, NAT'L GUARD, CHP   QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____
_____

MSG 12CG – MARIN TO:
GROUP, SFPD MARINE, SONOMA MARINE, NPS   QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____

MSG 13CG – NATIONAL GUARD TO:
MARIN, SFPD, GROUP, OES, CHP   QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____
_____

MSG 14CG – USPP TO:
SONOMA MARINE, SFPD MARINE, SFPD COM2   QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____
_____

MSG 15CG – MARIN TO:
CG BOAT, SFPD COM2, GGB, SFPD, USPP   QUALITY OF CONNECTION

SENT _____   RECEIVED _____   1   2   3   4   5

_____
_____

MSG 16CG – NPS TO:
SFPD MARINE, CG BOAT, GROUP, GGB, OES   QUALITY OF CONNECTION

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____
_____

SAMPLE DATA COLLECTION SHEETS FOR OPERATIONAL FIELD TESTS

DATA COLLECTOR: _____

LOCATION: _____

QUALITY OF CONNECTION SCALE

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

MSG 17CG – SFPD COM2 TO:
SFPD MARINE, CG BOAT, RICHMOND MARINE   QUALITY OF CONNECTION

— — — — — — — — — —   1   2   3   4   5

MSG 18CG – GROUP TO:
CG BOAT, RICHMOND MARINE, GGB   QUALITY OF CONNECTION

— — — — — — — — — —   1   2   3   4   5

MSG 19CG – GGB TO:
CG BOAT, SFPD COM2, NAT'L GUARD, GROUP   QUALITY OF CONNECTION

— — — — — — — — — —   1   2   3   4   5

MSG 20CG – SFPD TO:
CG BOAT, RICHMOND MARINE, SFPD COM2, GGB   QUALITY OF CONNECTION

— — — — — — — — — —   1   2   3   4   5

MSG 21CG – SONOMA MARINE TO:
SFPD MARINE, CG BOAT, RICHMOND MARINE   QUALITY OF CONNECTION

— — — — — — — — — —   1   2   3   4   5

MSG 22CG – SFPD MARINE TO:
SONOMA MARINE, RICHMOND MARINE, SFPD COM2, OES   QUALITY OF CONNECTION

— — — — — — — — — —   1   2   3   4   5

COMMENTS:
_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix C
SAMPLE DATA COLLECTION SHEETS FOR OPERATIONAL FIELD TESTS (MASTER)
For use by Exercise Control ONLY – Contains ALL message traffic

COMMUNICATIONS CHECK

DATA COLLECTOR: _____

LOCATION: _____

CALCORD – COMMAND GROUP (CG) *– MASTER SHEET – FOR EXERCISE CONTROL ONLY*

QUALITY OF CONNECTION SCALE

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

MSG 1CG – SFPD MARINE TO
CG BOAT, GGB, CHP
1 0 2 7 5 3 9 6 2 3
__ __ __ __ __ __ __ __ __ __

QUALITY OF CONNECTION

1   2   3   4   5

COMMENTS:
_____

_____

MSG 2CG – SONOMA MARINE TO:
 SFPD, SFPD COM2, GROUP, CHP
7 1 5 0 5 4 3 6 2 3
__ __ __ __ __ __ __ __ __ __

QUALITY OF CONNECTION

1   2   3   4   5

_____

_____

MSG 3CG – RICHMOND MARINE TO:
USPP, NPS, OES, NAT'L GUARD, CHP
5 4 3 1 0 4 8 2 9 8
__ __ __ __ __ __ __ __ __ __

QUALITY OF CONNECTION

1   2   3   4   5

_____

_____

MSG 4CG – OES TO:
CG BOAT, GGB, MARIN, CHP
0 4 1 4 1 2 1 5 0 9
__ __ __ __ __ __ __ __ __ __

QUALITY OF CONNECTION

1   2   3   4   5

_____

_____

DATA COLLECTOR: _____

LOCATION: _____

QUALITY OF CONNECTION SCALE

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

Comments

MSG 5CG – SFPD TO:
USPP, SFPD MARINE, GROUP, NAT'L GUARD, CHP   QUALITY OF CONNECTION
6 1 1 5 1 8 1 3 5 4

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

MSG 6CG – NPS TO:
SONOMA MARINE, RICHMOND MARINE, SFPD COM2, CHIP   QUALITY OF CONNECTION
2 8 4 1 5 0 6 1 8

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

MSG 7CG – CG BOAT TO:
SFPD, USPP, OES, NAT'L GUARD, CHP   QUALITY OF CONNECTION
6 4 8 5 2 7 2 0 1 8

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

MSG 8CG – GROUP TO:
MARIN, SFPD MARINE, SFPD COM2, CHP   QUALITY OF CONNECTION
8 3 3 6 3 6 0 5 5

__ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

MSG 9CG – GGB TO:
SONOMA MARINE, RICHMOND MARINE, NPS, CHP   QUALITY OF CONNECTION
3 9 7 1 6 5 0 9 6 2

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

MSG 10CG – USPP TO:
CG BOAT, MARIN, GGB, CHP   QUALITY OF CONNECTION
1 6 8 6 2 0 2 6 8 8

__ __ __ __ __ __ __ __ __ __   1   2   3   4   5

_____

_____

DATA COLLECTOR: _____

LOCATION: _____

<u>QUALITY OF CONNECTION SCALE</u>

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

COMMENTS:

<u>MSG 11CG – SFPD COM2 TO:</u>
USPP, OES, NAT'L GUARD, CHP   QUALITY OF CONNECTION
3 4 2 1 4 2 5 7 0 2
— — — — — — — — — —   1   2   3   4   5

_____

_____

<u>MSG 12CG – MARIN TO:</u>
GROUP, SFPD MARINE, SONOMA MARINE, NPS   QUALITY OF CONNECTION
5 9 1 9 1 8 9 7 4 8
— — — — — — — — — —   1   2   3   4   5

_____

_____

<u>MSG 13CG – NATIONAL GUARD TO:</u>
MARIN, SFPD, GROUP, OES, CHP   QUALITY OF CONNECTION
8 0 3 0 0 3 3 0 9 8
— — — — — — — — — —   1   2   3   4   5

_____

_____

<u>MSG 14CG – USPP TO:</u>
SONOMA MARINE, SFPD MARINE, SFPD COM2   QUALITY OF CONNECTION
0 5 2 4 6 7 7 0 0 7
— — — — — — — — — —   1   2   3   4   5

_____

_____

<u>MSG 15CG – MARIN TO:</u>
CG BOAT, SFPD COM2, GGB, SFPD, USPP   QUALITY OF CONNECTION
9 0 7 4 8 0 5 5 0 9
— — — — — — — — — —   1   2   3   4   5

_____

_____

<u>MSG 16CG – NPS TO:</u>
SFPD MARINE, CG BOAT, GROUP, GGB, OES   QUALITY OF CONNECTION
6 1 8 1 7 7 2 3 2 3
— — — — — — — — — —   1   2   3   4   5

_____

C-3

DATA COLLECTOR: _____

LOCATION: _____

QUALITY OF CONNECTION SCALE

No Connection	Weak/unreadable	Strong/unreadable	Weak/readable	Loud and Clear
1	2	3	4	5

MSG 17CG – SFPD COM2 TO:
SFPD MARINE, CG BOAT, RICHMOND MARINE   QUALITY OF CONNECTION
8 2 8 2 1 1 5 4 0 8
— — — — — — — — — —   1   2   3   4   5

MSG 18CG – GROUP TO:
CG BOAT, RICHMOND MARINE, GGB   QUALITY OF CONNECTION
5 3 2 8 7 0 5 8 9 6
— — — — — — — — — —   1   2   3   4   5

MSG 19CG – GGB TO:
CG BOAT, SFPD COM2, NAT'L GUARD, GROUP   QUALITY OF CONNECTION
4 4 0 7 3 9 5 5 4 3

— — — — — — — — — —   1   2   3   4   5

MSG 20CG – SFPD TO:
CG BOAT, RICHMOND MARINE, SFPD COM2, GGB   QUALITY OF CONNECTION
1 4 5 3 9 0 5 1 1 7
— — — — — — — — — —   1   2   3   4   5

MSG 21CG – SONOMA MARINE TO:
SFPD MARINE, CG BOAT, RICHMOND MARINE   QUALITY OF CONNECTION
6 1 1 5 1 8 1 3 5 4
— — — — — — — — — —   1   2   3   4   5

MSG 22CG – SFPD MARINE TO:
SONOMA MARINE, RICHMOND MARINE, SFPD COM2, OES   QUALITY OF CONNECTION
1 6 8 6 2 0 2 6 8 8

— — — — — — — — — —   1   2   3   4   5

COMMENTS:
_____

_____

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C-4

Appendix D
SAMPLE MESSAGE TRAFFIC FOR OPERATIONAL FIELD TESTS
Each sheet is given ONLY to the agency named in the title.
That agency is responsible for transmitting those messages.
The messages transmitted in these examples are the 10 digit numbers.

GGSN GOLDEN GATE BRIDGE EXERCISE
MARIN/OES DISPATCH MESSAGE TRAFFIC
REMEMBER TO USE
"PLAIN ENGLISH" *ONLY - NO CODES*

MSG #46DD – MARIN/OES TO CAMSPAC
2 9 7 3 5 4 7 7 6 2

MSG #47DD – MARIN/OES TO MARIN SHERIFF
0 8 3 5 5 6 0 8 6 0

MSG #48DD – MARIN/OES TO SFPD COM2
5 5 1 2 1 2 9 2 8 1

MSG #49DD – MARIN/OES TO SAN MATEO
6 1 9 5 8 7 7 1 0 0

MSG #50DD – MARIN/OES TO GG BRIDGE
5 5 9 8 6 6 6 4 8 5

MSG #51DD – MARIN/OES TO FBI
5 4 0 1 6 4 4 0 5 6

GGSN GOLDEN GATE BRIDGE EXERCISE
CAMSPAC DISPATCH MESSAGE TRAFFIC
REMEMBER TO USE
"PLAIN ENGLISH" *ONLY - NO CODES*

MSG #52DD – CAMSPAC TO MARIN SHERIFF
6 6 2 8 1 3 1 0 0 3

MSG #53DD – CAMSPAC TO SFPD COM2
0 0 6 8 2 2 7 3 9 8

MSG #54DD - CAMSPAC TO SAN MATEO
2 0 7 1 4 5 3 2 9 5

MSG #55DD CAMSPAC TO GG BRIDGE
0 9 1 8 8 2 0 0 9 7

MSG #56DD - CAMSPAC TO FBI
5 4 0 1 6 4 4 0 5 6

MSG #57DD – MARIN SHERIFF TO SFPD COM2
8 3 3 8 9 8 7 3 7 4

MSG #58DD – MARIN SHERIFF TO SAN MATEO
6 4 2 7 8 5 8 0 4 4

MSG #59DD – MARIN SHERIFF TO GG BRIDGE
8 6 8 8 7 5 5 0 8 7

MSG #60DD – MARIN SHERIFF TO FBI
3 2 6 2 4 6 8 6 9 1

GGSN GOLDEN GATE BRIDGE EXERCISE
SFPD COM2 DISPATCH MESSAGE TRAFFIC
REMEMBER TO USE
"PLAIN ENGLISH" *ONLY - NO CODES*

MSG #61DD – SFPD COM2 TO SAN MATEO
8 8 6 1 8 1 9 1 6 1

MSG #62DD – SFPD COM2 TO GG BRIDGE
6 0 8 3 3 2 5 9 8 3

MSG #63DD SFPD COM2 TO FBI
2 5 1 6 3 0 1 8 8 9

Equipment Survey	Name		
Name of Unit:			
	Name(s)		
Person(s) responding to questionnaire:			
	# Cards		
1. How many DSP-1 cards are in your unit?			
	# Cards		
2. How many PSTN-1 cards are in your unit?			
	Yes	No	
3. Can you attach your PSTN-1 card to a phone line or cell phone line in time for the test?			
	Type		
4. What type of radio interface cable(s) do you have?			
	Number		
5. How many radio interface cables do you have?			
	Trunked	Conventional	
6. Is your radio system trunked or conventional?			
	Manufacturer		
7. If your system is trunked, what is the manufacturer (e.g., Ma/Com, Motorola, etc.).			
	Fixed	Portable	
8. Is your ACU-1000 in a fixed location or is it portable?			
	Latitude	Longitude	Elevation
9. If your ACU-1000 is in a fixed location, what is its latitude, longitude and elevation?			
	Yes	No	
10. Does your unit have an NXU-2 network extension card?			
	Address		
11. If "yes" to #6, what is its IP address?			
	Radios	Frequencies	Power
12. What radios and frequencies does the ACU-1000 operate on, and what is its power?			

INCIDENT RADIO COMMUNIATIONS PLAN	1. INCIDENT NAME	2. DATE/TIME PREPARED	3. OPERATIONAL PERIOD DATE/TIME
	GGSN **Ferry Exercise** **2003-OES596**	**11/03/03** 1300 Hrs.	**11/18/03** _____ **Hrs. to** _____ **Hrs.**

4. BASIC RADIO CHANNEL UTILIZATION					
SYSTEM/CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS
1 – cross patch	CALCORD	Command Channel	156.0750 CSQ	On site of drill	
1 – cross patch	ITAC 3 Direct	Command Channel	XXX.XXX XXX.X	On site of drill	
2- cross patch	Marine Ch. 83A	Tactical Channel	XXX.XXX CSQ	RF3 @ YBI	
2 – cross patch	ITAC 4 Repeated	Tactical Channel	XXX.XXX XXX	RF3 @ YBI	
3- cross patch	CALCORD	Command Link	156.0750 CSQ	USCG TCC @ TI	
3 – cross patch	Satcom	Link to USCG Group SF	------		Group YBI link to Command

INCIDENT RADIO COMMUNIATIONS PLAN	1. INCIDENT NAME	2. DATE/TIME PREPARED	3. OPERATIONAL PERIOD DATE/TIME
	GGSN **Ferry Exercise** **2003-OES596**	**11/03/03** 1300 Hrs.	**11/18/03** _____ **Hrs. to** _____ **Hrs.**

5. BASIC RADIO CHANNEL UTILIZATION						

AGENCY/DIVISION	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS
USCG Water units	Marine 83A	Tactical	157.1750 CSQ	In-route & Drill	
Golden Gate Ferry	Marine 83A	Tactical	157.1750 CSQ	In-route & Drill	
Golden Gate Ferry	GGB Ch "F"	optional	XXX.XXX XXX	In-route & Drill	Optional communications channel.
SFFD Fire Boat	Marine 83A	Tactical	157.1750 CSQ	In-route & Drill	
SFPD Marine unit	Marine 83A	Tactical	157.1750 CSQ	In-route & Drill	
FBI	FBI identified				
USCG MSO - Sea Marshals	Marine 83A	Tactical	157.1750 CSQ	In-route & Drill	
USCG Group SF (YBI)	Satcom Link	Command			
USCG TCC @ TI	CALCORD	Command	156.0750 CSQ	Link to USCG Group SF	
SFPD Tactical Command	CALCORD	Command	156.0750 CSQ		

ICS-205

RADIO COMMUNICATIONS PLAN	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED	4. OPERATIONAL PERIOD (DATE/TIME)	
5. BASIC RADIO CHANNEL UTILIZATION					
AGENCY/DIVISION	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS
SFPD Tactical Division (SWAT Team)	Talk-group	Tactical Command	Trunked system		
FBI (SWAT Team)	Tac channel	Tactical Command			
USCG Sea Marshals	Marine 83A	Tactical	157.1750 CSQ		

**Appendix G
SAMPLE MOUs**

MEMORANDUM OF UNDERSTANDING

INTER-JURISDICTIONAL POLICE MUTUAL AID COMMUNICATIONS

IN NORTHERN VIRGINIA

NOVEMBER 8, 2000

We the undersigned, representing the Alexandria Police Department, Arlington County Police Department, Fairfax County Police Department, Metropolitan Washington Airports Authority Police Department, Town of Vienna Police Department, Town of Herndon Police, City of Fairfax Police Department, City of Manassas Police Department, City of Manassas Park Police Department, Alexandria City Sheriff's Office, Arlington County Sheriff's Office, Fairfax County Sheriff's Office, Prince William County Police Department, Prince William County Sheriff's Office, Loudoun County Sheriff's Office, Falls Church City Police Department, and the Falls Church Sheriff's Office (the "Agencies") do hereby agree to the following:

Whereas, the Agencies all utilize, or plan to utilize, trunked radio systems using technology from a common equipment vendor,

Whereas each of the Agencies desires to improve the quality and timeliness of inter-agency communications during law enforcement mutual aid operations,

Whereas, each of the Agencies desires to provide other Agencies with direct access to their individual trunked public safety radio system, for the express purpose of cooperation and coordination with neighboring law enforcement agencies,

NOW THEREFORE, The parties hereto jointly agree:

1.   Each Agency shall allow the other Agencies to directly access their respective public safety trunked radio systems.

2.   Each Agency shall share with the other Agencies all information necessary to configure and program user radios for operation on their respective public safety trunked radio systems.

3.   ALL programming information and parameters shall be considered CONFIDENTIAL and shall not be disseminated to any party not included in this Memorandum without the express written permission of the respective Agencies.

4.   Direct access is reserved for emergency, priority or other incidents where its use creates a significant advantage to law enforcement, including felony pursuits; officer needs emergency assistance, lookouts for incidents near political boundaries, perimeter search operations, and task force operations. Direct access may also be used to provide communications for pre-arranged activities, such as funeral escorts.

5.   Direct access during "priority" or "emergency" incidents is encouraged. The Agencies are encouraged to develop guidelines that permit field users to directly access neighboring trunked systems in a timely manner by notifying their dispatcher prior to switching. Telephone coordination between dispatch centers is not necessary.

6.   In cases where two Agencies share a common border, it is recommended that the Agencies share the appropriate "dispatch" and "primary tactical" talkgroup used in the adjacent jurisdictions and/or "districts", "patrol areas" or "beats".

7.   Plain English shall be used for all mutual aid communications. "10-codes", "signals", jargon and slang shall not be used.

8.   Examples: "Airport 131"
                        "Alexandria Unit Three Forty Four"
                        "Arlington Three Adam Eighty One"
                        "Fairfax City Unit 36"
                        "Fairfax County Scout Three Ten Baker"
                        "Herndon Baker 211"
                        "Vienna Unit One Twenty Four"

9.   When communicating with field units from neighboring jurisdictions, dispatch center personnel shall identify themselves by stating their agency name.

10.   In the case of 'short term", "priority", "emergency", and "notification" communications, once the need to communicate directly with a neighboring jurisdiction has been established, the field user shall inform their home dispatcher of their intention to switch, and only make the switch after dispatcher acknowledgement and clearance. If possible, the field user shall leave a radio on their home channel, in case their dispatcher or other units need to establish contact with them.

11.   When calling a neighboring jurisdiction, the field user shall state their unit identification as described above, the word "to" and the name of the agency that they are calling. The field user shall then wait for the dispatcher to respond before giving any additional information.

        Example: "Arlington Three Adam Eighty One to Fairfax County"

12.   Provided the channel is not currently in use, the neighboring jurisdiction's dispatcher should respond immediately. If the channel is in use, the dispatcher will ask that the calling user stand by.

      Example: "Fairfax County to Arlington Three Adam Eighty One, go ahead."

13.   After their call is acknowledged, the calling user shall state the reason that they are calling and what, if any action the neighboring jurisdiction needs to take.

      Example: "We have a bank robbery that just occurred in Arlington County on Route 50 just east of the county line. The direction of travel was westbound on Route 50 into Fairfax County. I have lookout information when you are ready to copy."

      Example: "I am on the scene of an accident with injury that just occurred on Columbia Pike, just west of the border in Fairfax County. I need one of your units to respond to this location, and start rescue for one patient with minor injuries."

14.   Once initial contact has been established and the reason given for the call, the communication shall proceed in a normal fashion until complete. Before returning   to their home radio system and channel, the calling user shall state their unit designator and inform the neighbor dispatcher that they are switching back to their normal channel

      Example: "Arlington Three Adam Eighty One, I have no further traffic. I am switching back to Arlington PD Channel One Adam."

15.   In the case of "long term" and "static" events where mutual aid assistance is requested by an Agency of another Agency, a supervisor shall contact the neighboring Agency or cause the neighboring Agency to be contacted and a formal request shall be made for mutual aid assistance in accordance with existing mutual aid agreements. If approved, the assisting Agency shall be provided with the specific type of assistance required (K-9, helicopter, etc.) by the requesting Agency. The assisting Agency shall be provided with the talkgroup or channel where communications for the mutual aid operation are being conducted by the requesting Agency. The assisting Agency shall determine the appropriate unit(s) to respond to the mutual aid event, and provide the above information to the responding unit(s) at the time of dispatch. Once all information is received, the responding unit(s) shall switch to the designated talkgroup on the requesting Agencies trunked radio system and initiate contact as outlined in Paragraphs 10-13 above.

16.   Complaints of abuse or unauthorized operation by users from neighboring jurisdictions are encouraged to be resolved at the field supervisor level as soon as

possible after an alleged problem occurs. If the complaint cannot be resolved at this level or if the severity warrants, a complaint in writing can be made to the jurisdiction involved. Written complaints shall include the date and time of the offense, the nature of the complaint, the six-digit radio identification number, the name of the person who witnessed the offense, and, if available, any audio recording of the offense. Complaints of abuse or unauthorized operation shall be resolved using established internal procedures, and a written response detailing the action taken shall be sent to the complaining Agency within 30 working days of the initial complaint.

17.   New law enforcement agencies may be added by amendment to this Memorandum from time to time, subject to the approval of the Agencies.

18.   Nothing in this Memorandum shall be construed as to prohibit any individual Agency from entering into mutual aid communications agreements with separate law enforcement entities not included in the Memorandum. Under not circumstances shall any Agency disseminate another Agency's programming parameters to any third party without express written approval from the other Agency.

19.   Each Agency shall assume full responsibility for all costs associated with programming their radios for direct access.

20.   During times of law enforcement mutual aid operation, each Agency shall make every reasonable effort to provide the same level of communications support to units from neighboring Agencies as they would to their own units.

21.   Each Agency shall designate a representative to serve son a Northern Virginia Police Mutual Aid Communications Committee. On an annual basis, the chair of this committee will be rotated through all member Agencies, by alphabetical order. These representatives shall meet on a quarterly basis, or more frequently as required, to identify and resolve any issues that arise during mutual aid or direct access. In the event that an Agency's representative is no longer available due to reassignment, the Agency shall appoint a new representative and inform the committee Chairperson in writing

   (A signature sheet follows for all the Executing Parties)

MEMORANDUM OF UNDERSTANDING
BETWEEN
IMPERIAL COUNTY SHERIFF'S OFFICE
AND
NAVAL AIR FACILITY - EL CENTRO

This Memorandum of Understanding (MOU) is adopted by and between the Imperial County Sheriff's Office (I.C.S.O.), and Naval Air Facility - El Centro (hereafter referred to as "Member Agency").

WHEREAS, I.C.S.O. owns and operates a radio dispatch center (hereafter referred to as "The Center"); and

WHEREAS, I.C.S.O. has received funding from the Office of National Drug Control Policy (ONDCP) to modify and expand its equipment to enable The Center to function as the hub of an activity known as the Imperial County Border Tactical Radio Communications Testbed, commonly referred to as "BORTAC II", the purpose of which is to provide enhanced radio communications interoperability between federal, state, and local law enforcement and public safety agencies via a radio channel patching system; and

WHEREAS, agencies that choose to become member agencies of BORTAC II, as evidenced by their acceptance of the terms of this Memorandum of Understanding, may connect to The Center through various interface arrangements, including dedicated telephone landline connections from their dispatch centers and/or radio transmitter facilities; and

WHEREAS, The Center has been expanded and enhanced to accept these interface connections; and

WHEREAS, Member Agency desires to access The Center through these connections for the purpose of establishing periodic inter-agency communications patches; and

WHEREAS, I.C.S.O. and the member agencies of BORTAC II benefit from the interconnection to other participating law enforcement agencies in the Imperial County region; and

WHEREAS, mutual aid and public safety are the joint concern of I.C.S.O. and the participating member agencies;

THEREFORE, I.C.S.O. and Member Agency do hereby agree as follows:

> 1. I.C.S.O. agrees to maintain and operate The Center and the interconnect point at the Central Electronics Bank (CEB) of The Center, located at 328 Applestill Rd, El Centro, CA, and to use its facilities to establish inter-agency radio patches as requested (initiated)

and permitted (accepted) by member agencies of BORTAC II. All communications patches processed by The Center must "in the clear"(not encrypted).

2. It is to be assumed that all radio and telephone communications processed by The Center will be recorded at The Center or at the dispatch centers of the agencies participating in the communications patch. Member Agency acknowledges and gives its consent to such recording.

3. Initiation and acceptance of radio patches shall be made by personnel who are specifically authorized in writing to do so. A record of each member agency's authorized personnel shall be maintained on file at The Center.

4. I.C.S.O. will facilitate only those radio patches that are initiated and accepted by authorized personnel of the agencies involved. No member agency will be required to accept a patch with any other agency. Initiation or acceptance of radio patches shall be at the discretion of the authorized personnel at the time the patch request is made.

5. I.C.S.O. makes no claim or guarantee of any kind as to the proper functioning or suitability of The Center's radio patching system for any particular purpose. Member Agency agrees to utilize The Center's radio patching facilities and services at its own risk, and to hold I.C.S.O. harmless from any liability arising from any and all use thereof.

6. I.C.S.O. and each Member Agency shall designate a representative to serve on the BORTAC II Steering Committee. The Steering Committee will be responsible for resolving operational and technical issues, and will meet as necessary to facilitate a smooth implementation and operation of the BORTAC II System, but shall meet no less than once each calendar quarter. The rules governing the organization and the conduct of business by the Steering Committee will be addressed by a separate document which will be developed by the Steering Committee at its first meeting.

7. Member Agency agrees to contract with the commercial telephone provider for the installation and rental of the telephone landline(s) necessary, if any, to connect Member Agency's system to The Center.

8. Member Agency agrees to notify I.C.S.O. in writing 30 days in advance when canceling contracts with the commercial telephone provider for any telephone landline connection(s) to the Center.

9. Either party has the right to terminate this agreement at any time with a minimum of 30 days advance notice. Notice to be given in writing to I.C.S.O. at the following address:

> Imperial County Sheriff's Office
> 324 Applestill Rd.
> El Centro, CA 9224
> Attn: Chief Deputy E. Mendoza

Notice to Member Agency shall be delivered to the following address:

> Naval Air Facility - El Centro
> _____
>
> _____
>
> _____

Notices pursuant to this agreement shall be by certified mail.

10. This Memorandum of Understanding constitutes the entire understanding and agreement between the parties, and there are no other understandings or agreements, either written or verbal, between the parties with respect to the parties' participation in the Imperial County Border Tactical Communications Testbed (BORTAC II).

The parties hereby affirm their agreement with this Memorandum of Understanding as evidenced by the affixed signatures of the persons authorized by the respective parties to enter into such agreements:

Naval Air Facility - El Centro   Imperial County Sheriff's Office

_____   _____
By   Harold Carter, Sheriff / Coroner
_____   _____
Date   Date

Metropolitan Interoperability Radio System

Metropolitan Interoperability Radio System (MIRS) comprises an interface/interconnect system that features the JPS Communications ACU-1000, an audio switch. The basic system components are interface modules, each of which is designed to connect 800 megahertz (MHz), ultrahigh frequency (UHF), telephone, and very high frequency (VHF) radio components. The computer-controlled system is be configured to cross-connect up to seven different patches simultaneously. The system configuration includes primary agencies, which can be interconnected immediately, and secondary agencies, which require the agency controlling the system to manually change radio channels at the switch.

Participation in MIRS is available to all local, state, and federal public safety agencies in the Washington, DC, metropolitan area. The Metropolitan Washington Council of Governments (COG) will exercise administrative control over system operations and participation. Due to the range limitation of some radio systems, limited frequencies for a given agency, and the interconnect capacity of the technology used to establish a MIRS patch, not all participating agencies will be charged with the same responsibilities. For this reason, participating agencies will be separated into three categories: host, primary, and secondary.

The agencies that host a MIRS system will be referred to as "host agencies" in this document. A current list of host agencies will be maintained as Attachment ## to this document. For any event requiring multiple responses across the public safety domains, a host agency will act as the point of contact when initiating the MIRS patch.

It will be the responsibility of the COG Police Communications Subcommittee to coordinate with the primary and secondary agencies assigned to a MIRS host agency's system. In addition, the subcommittee will ensure the addendum outlining each host agency's MIRS patch capabilities is kept up to date and distributed quarterly. When categorizing agencies as primary or secondary, the subcommittee will consider geographic location, radio coverage, and the likelihood of emergency communications interoperability needs as they relate to each of the host agency locations.

Primary Agency:

A primary agency has a primary operations channel programmed into the MIRS system at the host agency site. In the event of an emergency request for a patch to another primary agency, participating agencies will relinquish primary operations channels for the emergency incident until it is resolved, stabilized, or moved to another channel.

Secondary Agency:

Secondary agencies are described as agencies that provide frequencies to be programmed in the MIRS system at the host agency site. Generally, these agencies do not require communications interoperability with other agencies on a regular basis. In addition,

tactical frequencies (other than the primary operations channel) of the primary agencies, mutual aid, and interoperability channels available for use by public safety organizations are considered secondary agencies. Due to the limitations of the MIRS equipment (a maximum of either 12 or 24 radios can be used, depending on the host agency configuration), not all of the participating agencies in the Metropolitan Washington COG area will have immediate emergency MIRS patch capabilities. Emergency MIRS patches are available to secondary agencies; however, those patches will require extra set-up time because radio frequencies must be changed before the patch can be established.

> As an example, the Alexandria Police Department serves as host agency to the following primary agencies: Metropolitan Police Department, Metro Transit Police Department, and United States Park Police. The Prince George's County Maryland Fire Department and various tactical channels from area police departments would be considered secondary agencies by the host agency.

It is the responsibility of each MIRS participating agency to provide frequency information, private line (PL) codes, and talk groups to the COG Police Communications Subcommittee for the programming of the MIRS radios used by the host agencies. Request for participation and submission of the frequency information grants authority for the rebroadcast over the participating agency's radio system, as outlined in the COG PMARS–MIRS agreement. It will be the responsibility of each participating agency to promptly notify the appropriate COG Subcommittee of any changes in its radio channel assignments.

A MIRS patch will not be established until the participating agency makes an official request (as outlined in the PMARS–MIRS agreement). A host agency will immediately honor any request by a participating agency to disconnect a MIRS patch. A host agency will monitor the cross-connect function (i.e., patch) periodically to ensure it continues to operate correctly.

All requests to participate in, or withdraw from, the MIRS will be made in writing, on official letterhead, to the COG Police Communications Subcommittee.

I.   MIRS Operations

1. MIRS capabilities will be located at various public safety agencies in the region. Different agencies will be identified as the primary law enforcement, fire/rescue/EMS, and federal control points. Other than system testing, utilization of MIRS will be limited to emergency incidents, special events and tactical operations, and disasters.

    a. Under normal operating conditions, MIRS traffic will consist of systems testing. PMARS will remain the primary means of conducting administrative radio transmissions for dispatch-center-to-dispatch-center communications.

b. For day-to-day emergency incidents, MIRS supports the communications requirements for first and secondary responders as well as initial recovery efforts. The agency responsible for the incident will initiate the request for a MIRS patch. Note that initiating agencies requiring a MIRS patch will relinquish an operational channel for the duration of the event or until the event is moved to an alternate channel. All participating agencies are encouraged to use the MIRS patch whenever the operational need for crossband radio communications arises.

c. For special events or tactical operations, the lead agency is responsible for coordinating the use of MIRS with participating agencies, including the appropriate host agency. Requests should be made through appropriate internal approval structure. During a special event or tactical deployment, all participating MIRS stations will be notified via PMARS of the patch and the estimated time of deployment.

d. The MIRS system is intended to be scalable to accommodate operations ranging from first response to command and control operations. Participating agencies are encouraged to use existing 800 MHz mutual-aid trunked radio agreements or other preexisting agreements to support wireless communications whenever possible. When the situation stabilizes, alternate on-site communications (i.e., portable crossband interconnect equipment) may be deployed and the MIRS system returned to normal mode.

2. MIRS assets are best suited for events requiring a multijurisdictional response among agencies without compatible radio systems. The MIRS patch does not extend coverage for existing radio systems. However, interoperability between disparate radio systems is easily achieved using this patching technique. Furthermore, MIRS is not intended to replace the capabilities of communications support vehicles or operational command buses.

3. For those agencies using compatible 800 MHz trunked radio systems, a better alternative to the MIRS patch may be use of existing 800 MHz mutual-aid trunked radio agreements or other preexisting agreements. These agreements allow systems employing 800 MHz trunking technology to establish mutual-aid talk groups that will specifically address the anticipated needs of the participating jurisdictions.

II. Operational Procedures

1. The initiating agency will call the appropriate host agency to establish a MIRS patch. Notifications will originate from the dispatch center or communications section of the initiating jurisdiction. PMARS will serve as the primary notification vehicle for law enforcement agencies requesting a MIRS patch. Telephone or requests originating from field personnel are

considered alternate methods for notification. The host agency will announce on PMARS when the MIRS patch is in place.

2. Each participating agency will be responsible for clearing all non-related communications from the radio channel to be used for the MIRS patch.

3. The initiating agency will control MIRS field operations within its jurisdictional boundaries. In the event of a mobile incident, the initiating agency will relinquish control of MIRS operations to the receiving jurisdiction when the receiving jurisdiction's control point advises that it is prepared to assume control. Again, note that MIRS will not extend the coverage area of any radio system; when a unit is out of range of its own system, it will lose communications interoperability. If the agency responsible for the incident requires modification to the patch (i.e., an agency added or removed), the request will be made by the controlling agency via PMARS. If the controlling agency does not have PMARS capabilities, notification will be relayed using the telephone.

4. The dispatchers of agencies using a MIRS patch will monitor MIRS communications. Direct participation of dispatchers will be minimized to reduce confusion. Dispatchers will serve as resource agents, providing support as requested by MIRS patch mobile units.

5. Mobile units participating in a MIRS operation will be identified by their departmental name followed by their unit designation. For example: Prince George's County A-2 or Metropolitan Scout 99.

6. As with PMARS and MARNIS operations, no 10-Codes, signal codes, or departmental slang phrases will be used during a MIRS patch operation. All transmissions will be in plain language. Non-encrypted voice audio will be used for all communications.

7. The use of the Incident Command System (ICS) shall be encouraged in all MIRS operations.

III. General Testing Procedures

1. The Police Communications Subcommittee maintains testing results for PMARS, MARNIS, and MIRS. The main purpose for maintaining these results is to provide complete, accurate, and timely information for the respective chiefs of police and unit commanders. This information can then be evaluated to determine the effectiveness of PMARS, MARNIS, and MIRS.

2. MIRS testing will be initiated by a host agency. The host agency will coordinate each test with participating agencies. The MIRS test will be conducted by participating agencies on primary radio channels.

3. The Communications Supervisor within each participating MIRS agency is responsible for ensuring that testing is conducted in accordance with the procedures outlined in this manual.

4. The designated host agency shall conduct a MIRS test with each participating agency at least once per month. The host agency will vary the time of the test to cover various shifts. The tests may be conducted at any convenient time, provided that each participating agency is tested at least once per month.

IV. MIRS Testing Procedures

1. The host agency shall contact at least two primary agencies participating on the local host system and request to begin an operational test. The contacted agencies will be responsible for clearing traffic from the primary channel that will be used for the test.

2. The host agency will announce over PMARS that a test of MIRS is in progress.

3. Participating agencies will provide unit identifiers to the host agency prior to testing. The host agency will cross-connect the participating agencies together and announce over the patch which units will be conducting the test.

4. A unit from the first agency will call the unit from the second agency to test the patch. An example of this would be—

"Fairfax County Police Scout 920B to Metropolitan Police Unit 340, how do you copy this unit?" The Metropolitan unit will transmit a similar message.

Both units should describe the quality of the transmissions to the host agency. If the units could hear each other, the test was successful and will be noted as such in the test log. If it was unsuccessful, that will be noted and the appropriate corrective action will be initiated by the host agency.

5. After the test of the primary agencies, the MIRS system will be returned to normal operating mode. At least once each month, a test of at least two secondary agencies shall take place, with results recorded in the same manner as primary agency testing.

6. After testing is complete, the host agency will confirm that the MIRS has been returned to normal operating mode, followed by announcement via PMARS that MIRS testing is complete.

7. Once each month, technicians for each host agency will conduct technical equipment testing. During this test, the technician will restart MIRS by

powering it down and then back up. The technician will check all radios in MIRS to ensure they are operating correctly. The results of this technical test, as well as any problems, will be recorded on the monthly test record.

8. Monthly test report sheets have been supplied to each agency. Dispatchers shall indicate both the successful and unsuccessful patch tests and the time of day the test was conducted. A sample of this monthly report is supplied in Attachment ##.

9. The Monthly Test Report shall be mailed, by the fifth of the following month, to the address listed below. Host agencies shall keep on file test logs for at least the 2 previous months.

> Public Safety
> Metropolitan Washington
> Council of Governments
> 777 North Capitol Street, NE
> Suite 300
> Washington, DC 20002-4226

MEMORANDUM OF UNDERSTANDING
Maryland Incident Management Interoperable Communications System

      THIS MEMORANDUM OF UNDERSTANDING is entered into this day of _____ , by and between_____ and **MARYLAND STATE POLICE** (MSP) serving as the administrator of the **Maryland Incident Management Interoperable Communications System** (MIMICS).

      WHEREAS, all parties agree that lack of interoperable communications for emergency response has been an ongoing problem in the operations realm of Maryland's public safety environment, and now even more so in our ability to respond to terrorism. Historically, public safety responders have been limited in their ability to work effectively together at the point of service,(fires, accidents, natural disasters, search and rescue, etc.) because their communications systems lack the ability to talk freely amongst disparate communications systems and

      WHEREAS, all parties own and operate a public safety radio systems for their respective Public Safety Entities; and

      WHEREAS, all parties desire to provide interoperable communications with each other's Public Safety response personnel; and

      WHEREAS, all parties agree that interoperable communications would benefit the safety and well being of each party's personnel and constituents; and

      NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties agree that _____, MSP and MIMICS shall be permitted to share assets of each other's communications systems for the principal purpose of interoperable communications in the manner and upon the terms set forth below.

1.   STANDARD OPERATING PROCEDURES. Standard Operating Procedures shall be developed pursuant to this memorandum under different cover and shall be approved and signed by both parties to this Memorandum prior to granting access. These procedures shall be for the purpose of establishing operational standards between Public Safety agencies that shall include, at the very least, Police, Fire Department, EMS and other public safety response units. MIMICS will only be activated upon approval of participating parties as outlined in the SOP's.

2.   RADIO MANAGEMENT. Each party agrees to appoint a Radio Coordinator for their jurisdiction to assist with operational and administrative concerns of MIMICS.

IN WITNESS WHEREOF, the parties hereto execute this Memorandum of Understanding the day and year first above written.

ATTEST:

APPROVAL:

_____

_____   _____
Title   Signature

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

_____   _____
Office of Law   Date